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EXAMINER DUBASKY, GIGI L				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/588,543

**Applicant(s)**

ISOMURA ET AL.

**Examiner**

GIGI L. DUBASKY

**Art Unit**

2421

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/01/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-22 and 24-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-22 and 24-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-083)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Supplemental Office Action***

A Final Office Action was mailed on April 16, 2009 but the mail was returned to the USPTO on April 20, 2009, despite there being a proper address of record. This Office Action is being mailed as a supplement to reiterate the previous Final Office Action and to restart the statutory response period.

### ***Response to Arguments***

Claim 23 has been cancelled.

Claims 15-22 and 24-28 are pending.

1. Applicant's arguments in the Remarks filed on 01/12/2009 have been fully considered but they are not persuasive.

In response to Applicants' argument on page 12 lines 18-24, examiner respectfully disagrees. The cited prior art (herein Shikakura) does disclose the first and the second TV broadcast signals are each a digital TV broadcast signal (Col 1 lines 9-13 and 15-17 for TV digital broadcast environment; and Col 3 lines 23-25 and see Figure 1 for "signal 101" is digitized by "A/D converter 102" before being encoded by encoders 103 and 106. Therefore, the signals coming out from these two encoders are digital TV broadcast signals; and Col 8 lines 16-22 for decoding encoded signal into a

digital signal at the receiver), and the first TV broadcast signal has a content identical to a content of the second TV broadcast signal (see Figure 1, the output signal of "A/D converter 102" is split and input into two encoders 103 and 106; and see Figure 7, Col 7 lines 47-61 for the digitized image signal is input into the band dividing circuits (HL) 111 and (HH) 112 to obtain the low frequency and high frequency components respectively. In other words, the two input signals of the two encoders are the same and have identical content), and one of them has a higher quality than the other (Col 3 lines 23-51, Col 4 lines 26-37 and Col 8 lines 53-58).

In response to Applicants' argument on pages 13-15 that the Applicants argue the residual bit stream or the residual image signal or the high-frequency component of the image signal disclosed by Shikakura is not the Applicants' first TV broadcast signal because an image signal can not be obtained from the residual image signal, for that reason, Shikakura does not teach or suggest the first decoder for decoding the first TV broadcast signal..., the detector for detecting a decoding error part of the first TV broadcast signal... and the synthesizer for generating a composite signal..., examiner respectfully disagrees.

First, it does not require in the claim language that an image signal is obtained from the first TV broadcast signal or from the second TV broadcast signal originally. Second, the low frequency component or the low-quality image and the high frequency component or the residual image signal disclosed by Shikakura have equal functionalities as applicant's the first and the second TV broadcast signals, because they are used to obtain a lower hierarchic quality signal (Col 4 lines 43-47 and Col 8

lines 53-56) or a higher hierarchic quality signal (Col 3 lines 49-51) respectively. Third, Shikakura discloses the decoded image signal or the decoded low frequency component of signal is of the lower hierarchic image quality, allowing enough recognition of the content even though the image quality is low (Col 3 lines 34-40). Even the decoded low frequency component of signal or the decoded low-quality image signal can be used to obtain an low quality image, it is clear to one of original skill in the art that the decoded high frequency component of signal or the decoded residual image signal can also be used to obtain an image with even higher quality. So, Shikakura's high frequency component of the signal or the residual image signal has equal functionality as the Applicant's first TV broadcast signal to solve the same problem. Furthermore, Shikakura discloses the portion containing an error is specified within a frame (Col 6 lines 1-5). The "bit error position detection 212" detects the exact error position of high frequency component of the signals of the residual image signal (Col 5 lines 61-64) and control the "band synthesis unit 215" not to synthesize the error contained portion of the residual image signal based on detecting results (Col 9 lines 8-13). In this case, the corresponding portion of the low frequency component of the signal or the low-quality image signal is used alone in the filter (or replaces the error part of the high frequency component of the signal or the residual image signal) to output a lower hierarchic quality image signal within a frame (Col 5 lines 61-67 and Col 8 lines 48-58). Therefore, Shikakura clearly discloses the first decoder for decoding the first TV broadcast signal, the detector for detecting a decoding error part of the first TV broadcast signal and the synthesizer for generating a composite signal obtained by

replacing the decoding error part of the first TV broadcast signal detected by detector with a corresponding part of the second TV broadcast signal.

Therefore, in view of above reasons, examiner maintains the rejections.

### ***Miscellaneous***

Claim 20 recites the limitation of "**configured to**" in line 5 and line 7. The claim languages of "**adapted to**", "**adapted for**", "**configured for**", "**configured to**" and "**capable of**" may raise a question as to limiting effect of the language in a claim. This list of examples is not intended to be exhaustive. The subject matter of a properly construed claim is defined by the terms that limit its scope. The language, which suggests or makes optional but does not require steps to be performed or which does not limit a claim to a particular structure, is improper. See MPEP 2111.04.

### ***Claim Objections***

2. Claim 24 is objected to because of the following informalities:

Claim 24 recites to be dependent on claim 23 that is cancelled, which appears to be a mistake. It should be dependent on claim 15 based on the claim language. For the purpose of expeditious prosecution, examiner interprets claim 24 to be dependent on claim 15.

Appropriate corrections are required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 15-17, 24-26 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Shikakura et al (US 6108379).

Regarding claim 15, Shikakura discloses a broadcast receiving apparatus (Col 4, lines 1-3) comprising:

a receiver which receives a first TV broadcast signal and a second TV broadcast signal (elements 201 and 202 in Figure 1 and Figure 7; Col 4, lines 5-11 and Col 8, lines 16-22, but not limited to);

a first decoder which decodes the first TV broadcast signal received by said receiver (element 204 and 206 in Figure 1 and Figure 7; Col 4, lines 18-22, 30-34, Col 8, lines 27-32 and 39-43, but not limited to);

a second decoder which decodes the second TV broadcast signal received by said receiver (element 203 and 205 in Figure 1 and Figure 7; Col 4, lines 11-15, 25-27, Col 8 lines 22-25 and 33-39, but not limited to);

a detector which detects a decoding error part of said first TV broadcast signal decoded by the first decoder (element 211 and 212 in Figure 1 and Figure 7; Col 4, lines 51-55,

and Col 5, lines 48-67, but not limited to); and

a synthesizer which generates a composite signal obtained by replacing the decoding error part of the first TV broadcast signal detected by the detector with a corresponding part of the second TV broadcast signal decoded by said second decoder (element 215 in Figure 7; Col 8, lines 44-51 and Col 9, lines 8-13, but not limited to),

wherein the first TV broadcast signal and the second TV broadcast signal are each a digital TV broadcast signal (Col 1 lines 9-13 and 15-17 for TV digital broadcast environment; and Col 3 lines 23-25 and see Figure 1 for "signal 101" is digitized by "A/D converter 102" before being encoded by encoders 103 and 106. Therefore, the signals coming out from these two encoders are digital TV broadcast signals; and Col 8 lines 16-22 for decoding encoded signal into a digital signal at the receiver), and the first TV broadcast signal has a content identical to a content of the second TV broadcast signal (see Figure 1, the output signal of "A/D converter 102" is split and input into two encoders 103 and 106; and see Figure 7, Col 7 lines 47-61 for the digitized image signal is input into the band dividing circuits (HL) 111 and (HH) 112 to obtain the low frequency and high frequency components respectively. In other words, the two input signals of the two encoders are the same and have identical content), and provides video of a quality higher than a quality of the second TV broadcast signal (Col 3 lines 23-51, Col 4 lines 26-37 and Col 8 lines 53-58).

Regarding claim 16, Shikakura discloses the apparatus as discussed in the rejection of claim 15. Shikakura further discloses at least one of said first decoder and



said second decoder decodes the TV broadcast signal with use of the composite signal generated by said synthesizer (see elements 203, 205, 204, 206 and 215 in Figure 7; the inputs of "Band synthesization 215" are from both decoders).

Regarding claim 17, Shikakura discloses the apparatus as discussed in the rejection of claim 15. Shikakura further discloses said first decoder and said detector constitute a decoding and detecting unit which decodes the first TV broadcast signal and detects the decoding error part of the first TV broadcast signal during decoding of the first TV broadcast signal to output a detection result to said synthesizer (see elements 204, 212 and 215 in Figure 7; element 204 as first decoder, element 212 as detector that detects error of signal from element 204 and outputs a result to element 215 as synthesizer) .

Regarding claim 24, Shikakura discloses the apparatus as discussed in the rejection of claim 15. Shikakura further discloses the second TV broadcast signal is a broadcast signal for use in broadcasting under rainfall for the first TV broadcast signal (Col 1, lines 21-26, Col 4, lines 43-48, Col 5, lines 33-67 and Col 6, lines 16-46, but not limited to).

Regarding claim 25, Shikakura discloses the apparatus as discussed in the rejection of claim 15. Shikakura further discloses the first TV broadcast signal and the second TV broadcast signal are each a digital TV broadcast signal (Col 3, lines 23-24

and Col 4 lines 1-3, 8-11, but not limited to), and the first TV broadcast signal has a content identical to a content of the second TV broadcast signal, and is a signal modulated by a modulation system having a viewable receiving C/N ratio higher than a viewable receiving C/N ratio of a modulation system applied to the second TV broadcast signal ( see curve B and curve C in Figure 8; Col 3, lines 23-51, Col 4, lines 55-67, Col 6, lines 9-16 and Col 7, lines 26-39, but not limited to).

Regarding claim 26, all the limitations of claim 26 are analyzed corresponding to all functionalities of claim 15. Claim 26 is rejected under the same ground as claim 15.

Regarding claim 28, all the limitations of claim 28 are analyzed corresponding to claim 15. Claim 28 is rejected on the same ground as claim 15.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shikakura et al (US 6108379) in view of well known feature.

Regarding claim 27, claim 27 is directed toward embodying the method of claim 26 (detecting means for detecting a decoding error... and synthesizing means for generating a composite signal...) in "computer-readable storage medium". So, all functionalities of claim 27 are rejected under the same rationale as claim 26. It would have been obvious to embody the procedures of Shikakura discussed with respect to claim 26 in a "computer-readable storage medium" in order that the instructions could be automatically performed by a processor.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shikakura et al (US 6108379) in view of Hatabu et al (2005/0117643).

Regarding claim 18, Shikakura discloses the apparatus as discussed in the rejection of claim 15. Shikakura further discloses the synthesizer generates a composite signal obtained by replacing the decoding error part of the first TV broadcast signal detected by detector with a corresponding part of the second TV broadcast signal (element 215 in Figure 7; Col 8, lines 44-51 and Col 9, lines 8-13, but not limited to).

Shikakura does not explicitly disclose the limitations of "a first storage device which stores the first TV broadcast signal, and a second storage device which stores the second TV broadcast signal".

Hatabu discloses the limitations of a first storage device which stores the first TV broadcast signal (element 211-1 in Figure 3), and a second storage device which stores the second TV broadcast signal (element 211-2 in Figure 3).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Shikakura's receiver with the teaching of Hatabu about a plurality of buffers, so the reception side is not required to decode the plurality of received encoded data for the purpose of decoding the same frame or the same image area, making it possible to reduce an increase in the amount of calculations needed by the reception side (taught by Hatabu; paragraph [0040], lines 6-10).

8. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikakura et al (US 6108379) in view of Karaoguz et al (US 2005/0066089).

Regarding claim 19, Shikakura discloses all the limitations of the apparatus as discussed in the rejection of claim 15. Shikakura further discloses the first decoder and the second decoder constitute a single decoder (see Figure 1 or Figure 4 or Figure 9; "decoding apparatus 200" includes "elements 203 and 205" as the first decoder and "elements 204 and 206" as the second decoder).

Shikakura does not disclose a timesharing unit which timeshares the first TV broadcast signal and the second TV broadcast signal received by the receiver for outputting, and alternately decodes the first TV broadcast signal and the second TV broadcast signal timeshared by the timesharing unit.

Karaoguz discloses a timesharing unit which timeshares the first TV broadcast signal and the second TV broadcast signal received by the receiver for outputting, and alternately decodes the first TV broadcast signal and the second TV broadcast signal

timeshared by the timesharing unit ("decoder core 242" in Figure 2 includes a timeshared decoding processor; paragraph [0051], but not limited to).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Shikakura's receiver with the teaching of Karaoguz's decoder core module, so to reduce the space of circuitry and the cost of manufacture.

Regarding claim 20, Shikakura in view of Karaoguz discloses the apparatus as discussed in the rejection of claim 19. Shikakura in view of Karaoguz further discloses a first storage device which stores the composite signal outputted from the synthesizer (taught by Shikakura; element 303 in Figure 3; Col 7-32, but not limited to), and a second storage device which stores the second TV broadcast signal decoded by the single decoder (taught by Shikakura; element 304 in Figure 3 or element 404 in Figure 5), wherein said synthesizer is configured to store the second TV broadcast signal decoded by the single decoder in said first storage if said detector has not detected the decoding error part of the first TV broadcast signal, and is configured to read out the part of the second TV broadcast signal corresponding to the decoding error part from said second storage device to store the readout part in said first storage device if said detector has detected the decoding error part of the first TV broadcast signal (elements 215, and 211-213 in Figure 7 have all equal functionalities as claimed limitations; Col 8, lines 63-67 and Col 9, lines 1-31, but not limited to).

Regarding claim 21, Shikakura in view of Karaoguz discloses the apparatus as discussed in the rejection of claim 20. Shikakura in view of Karaoguz further discloses the single decoder decodes the first TV broadcast signal with use of the composite signal stored in said first storage device if the detector has detected the decoding error part of the first TV broadcast signal (taught by Shikakura; "decoding apparatus 200" as a single decoder, "elements 211 and/or 212" as detector; Col 5, lines 7-67, but not limited to).

Regarding claim 22, Shikakura in view of Karaoguz discloses the single decoder and said detector constitute a decoding and detecting unit which decodes the first TV broadcast signal corresponding to the second TV broadcast signal after decoding the second TV broadcast signal, and detects the decoding error part of the first TV broadcast signal during decoding of the first TV broadcast signal to output a detection result to said synthesizer (see Figure 7; "decoding apparatus 200" as single decoder, elements 211 and/or 212 as detector, and element 215 as synthesizer; Col 8, lines 39-67, but not limited to).

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GIGI L. DUBASKY whose telephone number is (571)270-5686. The examiner can normally be reached on Monday through Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John W. Miller/  
Supervisory Patent Examiner, Art Unit 2421

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